



# DUST CONTROL SOLUTIONS

We help maximise your silica dust protection



# SILICA DUST

**A dust filled workplace is  
a dangerous workplace**



## WHAT IT IS

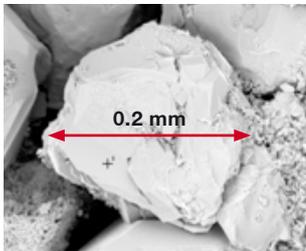
Crystalline Silica is a basic component of soil, sand, granite, and many other minerals. Quartz is the most common form of Crystalline Silica (Quartz means 'hard' in German)

59% of the earth's crust consists of Crystalline Silica, so it's going to show up in construction materials.

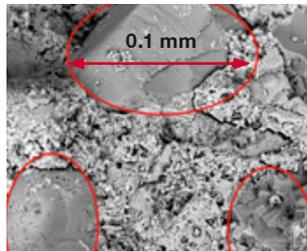
- Chemical formula  $\text{SiO}_2$
- Hardness (MoHS) 7 (concrete 5-7)
- Spec gravity 2.6 (concrete 2.4)
- Not readily soluble



## WHAT IT LOOKS LIKE

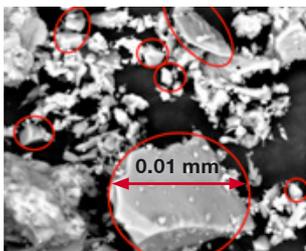


Silica particles in Sydney sandstone



Silica particles in Sydney sourced concrete

## HEALTH IMPACT



Silica particles recovered from a dust mask

- Can be breathed deep into the lung
- Because it is hard and insoluble, Macrophages on Alveoli cannot destroy it and lesions form on surface
- Can lead to Silicosis, rapidity of onset depending on exposure

# WHERE IS SILICA DUST FOUND?

Hilti Dust Removal Solutions

## SOURCES OF DUST

### Primary



Dust that's generated

### Secondary

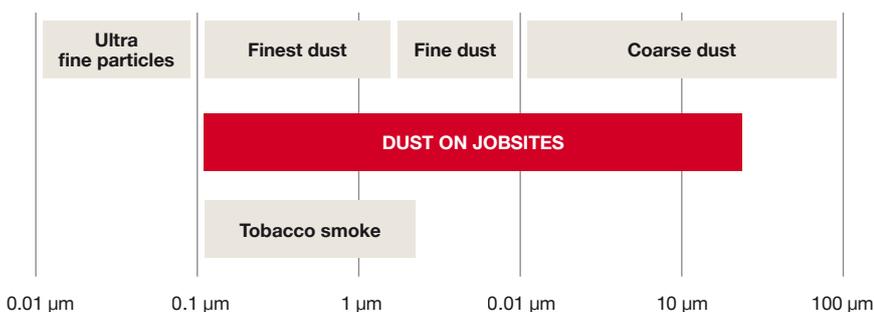


Dust that recirculates

## MATERIALS CONTAINING SILICA

Engineered stone	Fibre cement board	Concrete	Sandstone	Brick	Plasterboard	Natural Wood
						
> 93% crystalline silica	20 – 60% crystalline silica	5 – 40% crystalline silica	61 - 68% crystalline silica	50 - 60% crystalline silica	< 5% crystalline silica	<0.5% crystalline silica

## SIZE RANGE OF DUST



Particle size	Time to ground from 1 m height
50 µm	10 seconds
10 µm	5 minutes
1 µm (1/1000 mm)	7 hours
0.1 µm	12 days +

- From very small to very very very small...and then invisible!
- By way of comparison, a human hair measures between 7 and 180 µm.

The table indicates the time it takes for a particle to sink to the ground from a height of 1 metre in still air

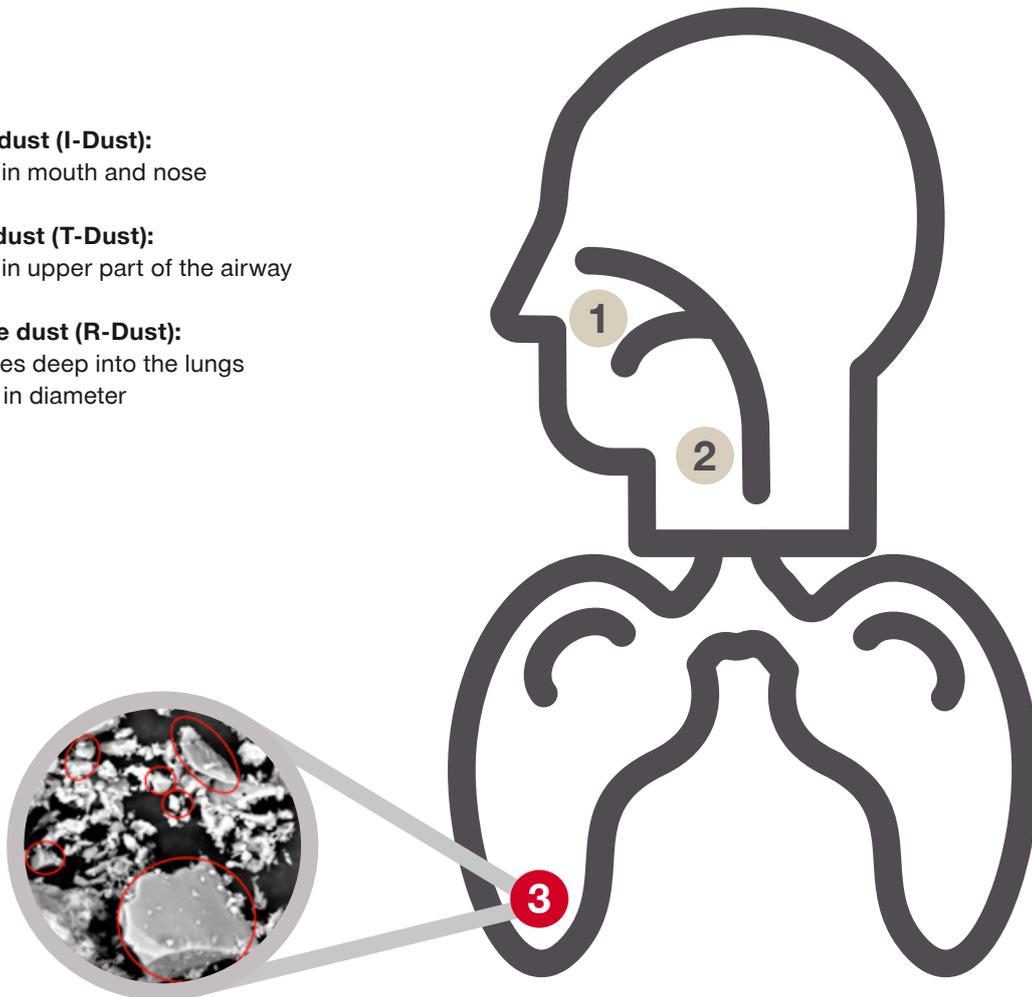
# WHAT ARE THE HEALTH RISKS?

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## 3 CLASSES OF DUST

- 1 Inhalable dust (I-Dust):**
  - trapped in mouth and nose
- 2 Thoracic dust (T-Dust):**
  - trapped in upper part of the airway
- 3 Respirable dust (R-Dust):**
  - penetrates deep into the lungs
  - < 10  $\mu\text{m}$  in diameter

## ...AND WHERE IT GOES



## SANITY CHECK

Working Exposure Standard for respirable silica dust is  $0.05 \text{ mg/m}^3$ . Not much when you compare it to a \$2 coin.

What does this mean?  
In a volume measuring  $1 \times 1 \times 1 \text{ m}$  only **half a match head** of respirable silica dust in the air is **allowable** over an 8 hour shift.



# HOW CAN WE CONTROL SILICA DUST?

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## WE CAN USE A 'HIERARCHY' OF CONTROLS

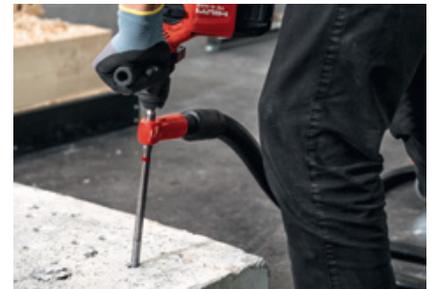
### Using Work Methods to reduce dust (eg wet cutting or polishing, water sprays during earthworks)

- Alternative technology - core instead of drill
- Alternative technology – direct fasten instead of drill & anchor
- Alternative technology – cast in channels instead of drill & anchor



### Using Local Exhaust Ventilation, either fixed or on-tool

- Hollow drill bits attached to a vacuum cleaner
- Dust hoods attached to a vacuum cleaner for grinding, cutting, chasing
- Dust hoods attached to a vacuum cleaner for drilling and breaking



### Vacuum Clean-up rather than sweeping

- Use vacuum cleaners and accessories for cleaning and very importantly, collection bags for dust

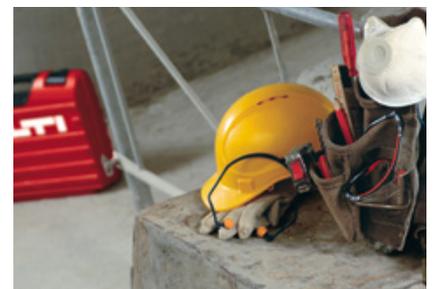


### Not blowing dust with compressed air or air blowers

- Select proprietary drilling systems where you do not have to blast the hole clean with compressed air

### Respiratory Protective Equipment

- The last line of defence for residual dust in the environment



# USING ALTERNATIVE TECHNOLOGY

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## CAST IN USING A CHANNEL



Instead of post-installing anchors with the resulting dust emission from the hole, it is possible to cast-in an anchor point prior using a channel. T-bolts can be slotted into to create a fixing point

## CORE DRILLING



Holes for anchors or rebar can be cored instead of hammer drilled. Slurry can be collected with a water recycling unit, so slurry isn't spilled only to turn into dust when it dries. Penetrations can be cored instead of broken out with a combination of cutting and breaking, which also reduces dust emission.

## DIRECT FASTENING



In many cases, mechanical fasteners that require a hole to be drilled (and dust emitted) are simply over-designed for the loads they have to carry. Direct fastening tools can often yield a fixing point that is fit for purpose. It's quick to make the fastening point and it doesn't generate any dust.

# VACUUM CLEANERS

Keep your jobsite clean  
and dust controlled



## VACUUM CLEANER CLASSES

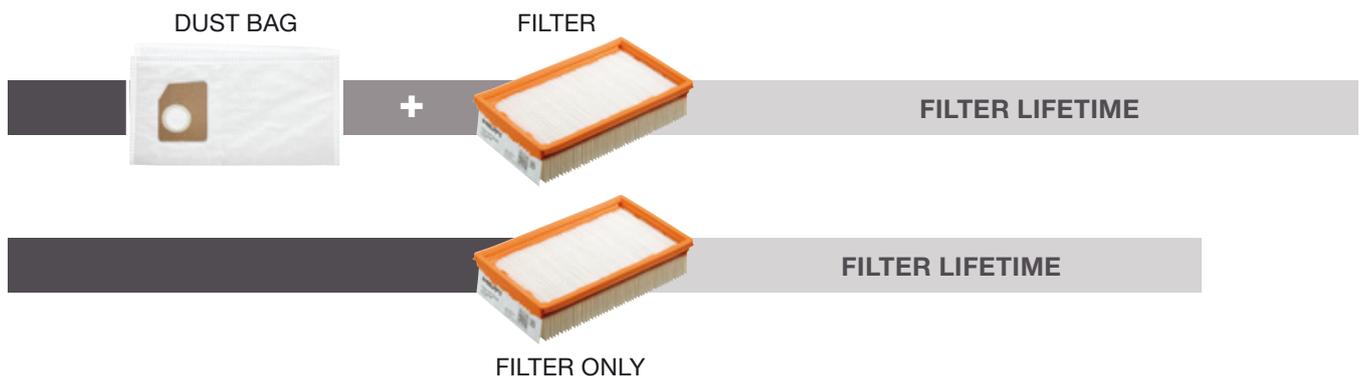
The dust classification and HEPA standard are not using the same parameters and are therefore difficult to compare directly

Class	L Class	M Class	H Class
<b>Dust concentration</b>	High concentrations of low hazard dusts	High concentrations of moderate hazard dusts	Low concentrations of high hazard dusts
<b>Examples of dust types</b>	Domestic dust, soft woods	concrete, brick dust, hard woods, board mater	highly carcinogenic dusts, asbestos, formaldehyde, mould, germs, bacteria
<b>Protection level</b>	99% of particles trapped Max. transmittance: ≤ 1.0% per m <sup>3</sup>	99,9% of particles trapped Max. transmittance: ≤ 0.1% per m <sup>3</sup>	99,995% of particles trapped Max. transmittance: ≤ 0.005% per m <sup>3</sup>
<b>Build-in Features</b>	N/A	<ul style="list-style-type: none"> <li>Indicator (air velocity &lt; 20 m/s)</li> <li>Safe change filter</li> <li>Fitted with disposable collection means</li> </ul>	M dust class plus: <ul style="list-style-type: none"> <li>Non-reusable essential filter</li> <li>Essential filter only removable by the use of a tool</li> </ul>

HEPA means 'High efficiency particulate air'. There are several European and American standard grades available. Hilti vacuum cleaners are delivered a European standard that removes 99.95% of particles that have a size greater than 0.3 um.

## MAINTENANCE

- Do not use compressed air or water to clean a filter, neither bend it or bash it, as it destroys the filter's base material and allow all particles to pass thought it
- Change filters regularly to protect the motor – it will considerably increase the lifetime of the vacuum cleaner
- Using a fabric or paper dust filter bag increases the filter lifetime as it acts as a pre-filter



# THE HILTI RANGE OF VACUUM CLEANERS

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Compact and cordless



VC 5-A22

Cleaning and concrete slurry



VC 40-U

## L CLASS

**Dust concentration:** High concentrations of low hazard dusts

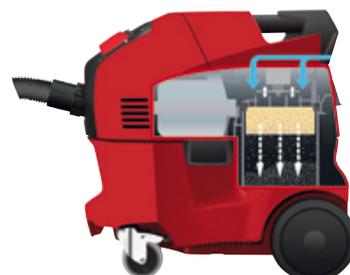
**Examples:** Domestic dust, soft woods

TECHNICAL DATA	VC 5-A22
Wet / Dry	Dry
Power	22 V battery
Air flow	35 l/s
Tank capacity	5 l
Water capacity	-
Weight	4.3 kg
Filter cleaning	Manual

Technical data	VC 40-U
Wet / Dry	80% Dry / 20% Wet
Power	1200 W
Air flow	61 l/s
Tank capacity	36 l
Water capacity	25 l
Weight	14.7 kg
Filter cleaning	Auto / function to switch off

## ABOUT OUR VACS

- Hilti AirBoost filter technology provides consistently high suction performance: Every 15 seconds, the air flow is reversed for milliseconds to remove the dust stacked in the filter. It is possible to stop this function.
- Full exploitation of tank capacity due to placement of filter and hose connection in the upper part of the machine
- Automatic on/off for improved working comfort when plugged directly on the vacuum.



## Cleaning and concrete slurry



**VC 40-UM**

## Super powered



**VC 60M-X**

### M CLASS

**Dust concentration:** High concentrations of moderate hazard dusts

**Examples:** Concrete, brick dust, hard woods, board materials

Technical data	VC 40-UM
Wet / Dry	80% Dry / 20% Wet
Power	1200 W
Air flow	61 l/s
Tank capacity	36 l
Water capacity	25 l
Weight	14.7 kg
Filter cleaning	Auto / function to switch off

Technical data	VC 60M-X
Wet / Dry	80% Dry / 20% Wet
Power	2400 W
Air flow	148 l/s
Tank capacity	65 l
Water capacity	48 l
Weight	24.5 kg
Filter cleaning	Auto / function to switch off

**Our vacs are highly mobile and jobsite suitable :**

- High resistance (big and robust wheels)
- Easy transport of tool boxes
- Optimised storage space (push bar and accessory)



# CUTTING, SLITTING & GRINDING

Designed for easy  
handling and high  
performance



# DUST CONTROL FOR LIGHT CUTTING

Hilti Dust Removal Solutions

## AG 125 – 5” GRINDERS



AG-125 19SE 1900 W grinder



AG 125-15DB 1500 W safety grinder



AG-125 13SE 1300 W safety grinder



AG 125-A22 cordless 22 V grinder



AG 125-A36 cordless 36 V grinder

### Electric powered angle grinders/cutters for the construction industry

- Design to for cutting mineral material up to 25 mm with diamond blades without use of water
- Ergonomically designed tool for universal use in cutting and grinding applications
- Hilti Smart Power Technology™ for constantly high cutting performance
- Depth gauge to minimise dust exposure while plunging-in
- Time-saving cutting and slitting (chasing) in widths up to 25 mm using two discs (with DC EX 125/5” accessories)



DC-EX 125/5 dust hood



## AG 230 – 9” GRINDER



AG 230-24D 2400 W grinder



DC-EX 230/9 dust hood

### Electric powered angle grinder/cutter for the construction industry

- Design to for cutting mineral material up to 60 mm with diamond blades without use of water
- Rugged optional dust removal hood and soft grips for virtually dustless operation and greater comfort
- Hilti Smart Power technology automatically adjusts power output to suit the material being cut – delivering consistently high cutting performance and protecting the motor from overload
- Adjustable side handle – for a secure, comfortable grip when working in any position



## DCH 300-X WET / DRY ELECTRIC CUTTER



### Safest electric cutter without compromise on productivity

- Water kit for wet usage offering +30% additional speed in concrete
- 120 mm cutting depth due to very slim Hilti gear box design with 305 mm blades
- Improved VC connection
- Very efficient dust collection thanks to inverse blade rotation
- Depth gauge to minimise dust exposure while plunging-in
- Sparks (hitting rebar) guided away from users body
- Wheels for straight cuts reduce jamming risk



## DSH 900-X GAS SAW



### Powerful and versatile demolition saw

- Carry blades up to 400 mm
- Best depth cup of power tools up to 150 mm
- Independence from electrical power supply
- Use with DSH-P to suppress dust when wet cutting

### Easy maintenance with:

- Unique auto choke design
- Self-tensioning belt
- Cyclone filter
- Provided self-maintenance kit (rope/ filter exchange)
- Safe tool thanks to integrated wheels, wear ribs + Trolley available



DSH-P

# DUST CONTROL FOR CUTTING CHANNELS

Hilti Dust Removal Solutions

## DC-SE 20 SLITTING TOOL



### The safest slitting tool for electrical jobs

- Very high slitting performance
- Universal or specific diamond discs
- Cutting depths up to 40 mm and groove widths up to 46 mm
- Built in dust collection system
- Ergonomic design to reduce tiring for right or left-handers
- Low vibration
- Discs covered on all sides
- Carriage guidance, even during first plunge cut
- Slits concrete, cement shapes, brick products, sand-lime brick, flint, hard stone etc.



## DCH 180-SL SLITTING TOOL



### Wide and depth cuts, in one-way for piping jobs

- High slitting performance
- Universal or specific diamond discs
- Cutting depths up to 60 mm and groove widths up to 60 mm
- Built in dust collection system which make the tool virtually dust-free
- Low vibration
- Slits concrete, cement shapes, brick products, sand-lime brick, flint, hard stone etc.
- Depth gauge for maximum accuracy



## AG 125 ANGLE GRINDER WITH SLITTING ADAPTER



### Dust controlled slitting with the Hilti AG 125 angle grinder

- Time-saving cutting and slitting (chasing) in widths up to 25 mm using two discs (with DC EX 125/5" accessories)



# DUST CONTROL FOR GRINDING

Hilti Dust Removal Solutions

## AG + DUST HOODS



AG-125 19SE 1900 W grinder



AG 125-15DB 1500 W safety grinder



AG-125 13SE 1300 W safety grinder

### Powerful angle grinders/cutters for the construction industry

- Ergonomically designed tool for universal use in cutting and grinding applications
- Hilti Smart Power Technology™ for constantly high cutting performance
- Depth gauge to minimize dust exposure while plunging-in



DC-EX 125 dust hood



## DGH 130 CONCRETE WALL DIAMOND GRINDER



### Maximum productivity and best finishes quality totally dust-free

- Natural, ergonomic head grip
- Effortless operation due to high suction effect
- Fixed and built-in dust hood with vacuum ready connection
- Easy dust hood height adjustment and edge access for perfect dust extraction
- +50% productivity VS angle grinder
- Depth gauge for maximum accuracy



## DG 150 CONCRETE FLOOR DIAMOND GRINDER



### Top performance, maximum cost efficiency

- Material removal and surface preparation in one operation
- Productivity X2 VS angle grinder
- Virtually dustless operation thanks to advanced dust hood design with optimised air flow



# BREAKING, DRILLING & CORING

The right tool for  
every situation



## DRS-B DUST REMOVAL SYSTEM



### A universal dust removal system that suits most Hilti breakers

- The TE DRS-B dust removal system is compatible with all Hilti breakers (Y, S), pointed and flat chisels and bushing tools with all Hilti vacuum cleaners
- The first professional, extremely effective dust removal system created for indoor chiselling work
- Removes up to 95% of critical, fine dust, which gives to best possible protection to the user
- Reduces noise and vibrations



- The patented 2-chamber air-flow system removes virtually all the fine dust particles
- An internal ring in the two vacuum heads keeps the system from being blocked by preventing larger pieces from entering the vacuum head

## DRS 3000 (FOR HILTI TE 3000)



- Easy installation and handy chisel change mechanism
- Accessories can be purchased separately



# DUST CONTROL FOR DRILLING

Hilti Dust Removal Solutions

	TE-2A	TE-4A	TE-6A	TE-7C	TE-30/A	TE-50/60/A/70	
	 SDS plus	 SDS plus	 SDS plus	 SDS plus	 SDS plus	 SDS max	
On-board attachments w/o external vacuum		DRS 4A 	DRS 6A 	DRS M 			
On-board attachments with external vacuum	DRS D  	DRS D  	DRS C  	DRS D  	DRS C  	DRS D  	DRS Y  
Hollow drill bits		TE CD  				TE YD  	

On-board attachments w/o external vacuum



### Features

- Virtually dustless drilling in critical environments, e.g. occupied rooms, hospitals, laboratories, production lines, etc.
- Robust housing to help protect the filter from damage
- Replaceable filter in the dust container

On-board attachments with external vacuum



### Features

- Unique Hilti system for virtually dust-free drilling, chiselling and coring with combihammers
- Removes up to 99% of fine dust for a clean workplace

Hollow drill bits



### Features

- Drilling and hole cleaning in one step
- Optimum hole cleaning for consistent anchor setting
- Robustness, lifetime and drilling speed equal to TE-YX drill bits
- Minimised snagging or sticking when drilling into rebar

# DUST CONTROL FOR CORDLESS

Hilti Dust Removal Solutions

## TE 4-A22 CORDLESS ROTARY HAMMER



- Virtually dustless drilling with the DRS-4-A dust removal system
- Ergonomically designed D-grip for comfortable use over long periods
- Robustly built and superbly engineered for cordless optimisation



## TE 6-A22 AND TE 6-A36 CORDLESS ROTARY HAMMERS



- Virtually dustless drilling when used with the DRS-6-A dust removal system
- Extremely powerful rotary hammer, designed for serial anchor hole drilling in concrete
- Active Vibration Reduction (AVR) makes the tool less tiring to use – helping to increase daily productivity
- Depth gauge for maximum accuracy



# COMPLETE SLURRY MANAGEMENT

Hilti Dust Removal Solutions

## DD-WMS-100 WATER MANAGEMENT SYSTEM



DD-WMS slurry bags

**A single unit for the supply of cooling water as well as the collection and filtration of wastewater from diamond drilling systems**

- Keeps jobsites clean – all slurry is collected with Hilti water collection systems
- Provides up to one full day of water autonomy for wet diamond coring applications
- Maintenance-free
- Easy disposal process – all the slurry is collected in the filter bag
- One filter bag recycles wastewater up to 7 times; equal to 100 litres of water with only initial 14 l
- Suitable for all wet diamond coring applications
- Works with all Hilti diamond coring tools
- Operates in 3 modes – recycling, vacuum cleaning and water supply
- 5 sizes of rings available
- Compatible with DD-WMK sets to core horizontally slurry free in walls



Various ring sizes and types

## FITS ALL CORING TOOLS FOR HOLES UP TO 450 MM



### DD 250 and DD 350-CA

- Works with DD 250 and DD 350-CA, for heavy opening applications from 18 mm to 450 mm



### DD 30-W

- Works with DD 30-W, for anchor holes applications from Ø8 to Ø35



### DD 150-U

- Works with DD 150-U, for light penetrations applications from Ø12 to Ø162

# SAWING

Powerful cutting tools for every application



# DUST CONTROL FOR SAWING

Hilti Dust Removal Solutions

## SR CORDLESS RECIPROCATING SAWS



SR 30-A36



SR 6-A22

### The safest recip saws with dust control

- High-performance saw optimised for metal and wood demolition, lightweight tool with long service life
- Keyless clamp for fast, easy and safe blade changes
- Innovative dust removal accessory available
- Tool ergonomics optimised for comfortable, two-handed operation



## SCW CORDLESS CIRCULAR SAWS



### SCW 22-A and SC70W-A22

- Lightweight and ergonomic tools
- Both include dust ports which allow debris to be extracted and collected
- Fast blade stop for safe operation



## SJ CORDLESS ORBITAL JIGSAWS



### SJD 6-A22 and SJT 6-A22

- Vibration reduction and fast blade stop
- Best in class ergonomics for ease of use
- Delivers power similar to that of corded tools
- Both include innovative dust ports to extract and collect debris



# THE WAY FORWARD

Where we go  
from here





## SafeWork NSW

**SafeWork NSW corporate website page about crystalline silica**



NSW offer **\$500 rebates to small businesses** (less than 50 people) who buy and install equipment that makes their workplace safer.

- Included Items:**
- installation of safe ventilation, exhaust or extraction systems
  - dust suppression tools and attachments



**WorkSafe Victoria corporate website page about crystalline silica**



**WorkCover QLD corporate website page about crystalline silica**



**Breath Freely Australia website with information on how to avoid Occupational Lung Disease**



# WE'RE HERE TO HELP

## How to get in touch



### Contacting Hilti



#### CUSTOMER SERVICE

Customer Service representatives are available Monday to Friday from 7:30am to 5:00pm. Our professionally trained team can help you with product advice, orders and deliveries, as well as organising on-site product demonstrations.

**Call: 131 292 Fax: 1300 135 042 Email: [serviceaustralia@hilti.com](mailto:serviceaustralia@hilti.com)**



#### HILTI STORES

Our national network of Hilti Stores are much more than display or sales points for Hilti products. At a Hilti Store, you can receive professional advice on products and applications. You can also have hands-on demonstrations of Hilti products. Find a location near you.

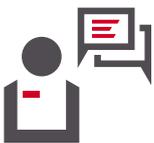
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NSW 2015  
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Seven Hills NSW 2147  
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##### Brisbane

718 Kingsford Smith Drive  
Hamilton QLD 4007  
Mon – Fri 7.00am – 5.00pm

##### Adelaide

183 Railway Terrace  
Mile End South SA 5031  
Mon – Fri 7.00am – 5.00pm

##### Sydney – Lidcombe

35 Parramatta Road  
Lidcombe NSW 2141  
Mon – Fri 7.00am – 5.00pm

##### Melbourne

203-205 Normanby Road  
South Melbourne VIC 3205  
Mon – Fri 7.00am – 5.00pm

##### Gold Coast

Unit 5/46-50 Spencer Road  
Nerang QLD 4211  
Mon – Fri 7.30am – 4.30pm

##### Perth

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